ABSTRACT

Systems and methods for ambient noise compensation are disclosed. One example of a system includes a variable amplifier, a source sound processor, an area sound processor, and an adjustment circuit. The variable amplifier adjusts an audio input signal to generate an audio output signal with an appropriate level so that the audio output signal is audible over noise in a listening area. The source sound processor and the area sound processor may split the audio output signal and a monitoring signal into frequency bands, and may compare these signals band-by band to find differences that represent time-varying noise in the monitoring signal. These differences may be modified to account for the acoustic response of the listening area and for constant-level background noise in the listening area. The adjustment circuit controls the variable amplifier in response to these differences.